JONES, FRANK M., 1930: *Dynastes tityrus* in Pennsylvania and New Jersey. Entomol. News, Vol. XLI, pp. 305-306. (Refers to the specimens taken by Acrelius in his garden.)

LACORDAIRE, J. T., 1857: Genera des coléoptères. Vol. IV.

LAPORTE, F. L. N., Compte de Castelnau: 1883: Essai d'une revision du genre lampyre. Ann. Soc. Ent. France, Vol. II, pp. 122-153.

LECONTE, J. L., 1851 (1852): Synopsis of the lampyrides of temperate North America. Proc. Acad. Nat. Sciences, Phila., Vol. V, pp. 331-347.

LECONTE, J. L., 1881: Synopsis of the Lampyridae of the United States. Trans. Amer. Ent. Soc., Vol. IX, pp. 15-72.

MCDERMOTT, F. A., 1953: *Photuris bethaniensis.* Proc. U. S. Nat. Mus. Vol. CIII, No. 3314, pp. 35-37.

MCDERMOTT, F. A., 1962: *Photuris missouriensis.* Entomol. News, Vol. LXXIII, pp. 39-43.

MCDERMOTT, F. A., 1966: Ent. News, *Photuris Lloydi*

MCDERMOTT, F. A., AND J. B. BUCK, 1959: The Lampyrid Fireflies of Jamaica. Trans. Amer. Ent. Soc., Vol. LXXXV, pp. 1-112.

MOTSCHULSKY, V.: Études entomologiques; I, 1853; II, 1854; III, 1854; IV, 1855.

OLIVIER, E., 1886: Etudes sur les lampyrides, II. Ann. Soc. Ent. France. (6) VI, pp. 201-246.

FRANK ALEXANDER McDERMOTT (1885-1966)

In bygone days it was not unheard of for physical scientists to be amateur naturalists, but few achieved professional distinction in both fields. In the recent death of F. A. McDermott we have lost a classic example of this now very rare species: a man who spent a full and productive life as a chemist and microbiologist; then, in fifteen years of industrious retirement, built an early interest in fireflies into a position as a world authority on the taxonomy and natural history of the Lampyridae.

Mr. McDermott was trained as a chemist, first at George Washington University, then at the Mellon Institute of the University of Pittsburgh, where he received his B.S. in 1913 and M.S. in 1914. His professional career included six pre-college years in the Hygienic Laboratory of the U. S. Public Health Service, four in the fermentation laboratory of the Corby Co., and 32 years with E. I. du Pont de Nemours & Co., Inc., in Wilmington, Delaware, during the last 24 of which he was chief chemist of their Deepwater industrial alcohol plant. His activities in these posts are attested by a score of published papers and notes on fermentation, general chemistry, and laboratory instrumentation, by 13 U. S. patents (10 assigned to the Du Pont Company) of processes related to organic acids and oils and commercial production of glycerol, alcohols, and resins, by his membership in various professional societies and by his reception of the Thobald Smith Medal at the 3d International Congress of Microbiology (1939) and a Modern Pioneer award of the Philadelphia Chamber of Commerce and

National Association of Manufacturers at the commemoration of the 150th anniversary of the U. S. patent system (1940).

Though born in Washington and resident there during high school and early adult years, Mr. McDermott came from colonial New England stock and his early interest in biology may have stemmed from boyhood collecting in the Thoreau-saturated environment of the family home in Concord. Whatever the reason, he found ample encouragement in natural history among his professional superiors in Washington and his friends in the Smithsonian, Department of Agriculture, and U. S. National Museum. One of the most influential of these early associations in turning McDermott's attention to bioluminescence was that with H. S. Barber, a lifelong field companion and friend. McDermott's first note on fireflies appeared in 1910, and before he moved to Wilmington in 1918 he had published on the chemistry, histology, and physics of firefly luminescence as well as the related subjects of chemiluminescence and electric illumination, and, in a long series of behavorial notes, established the importance and significance of firefly flashing signals in mating.

When McDermott took up his career as a DuPont chemist he must have viewed the move as marking the end of his love affair with the firefly, for he presented to the Smithsonian several books and bound volumes of separates dealing with bioluminescence, some stamped "Biofotogenesis Library of F. Alex. McDermott". Indeed for the next 30 years no contribution to lampyridology issued from his pen. But the ferment must have been working, for in 1948, two years before his retirement, the privately printed "Common Fireflies of Delaware" appeared. In 1951 he edited and supplemented Barber's 58 page posthumous monograph on the genus *Photuris,* in which flashing signals are boldly made an essential part of the specific descriptions. In the same year McDermott visited Jamaica to gain the field experience he felt to be essential to complete his definitive treatment of the "Lampyrid Fireflies of Jamaica" (1959), a 112 page work long delayed by the slowness of the junior author.

Meanwhile a steady stream of taxonomic and behavorial notes was issuing from the well appointed laboratory McDermott set up in his suburban Wilmington home. In these descriptions of new species and genera (eventually totalling 20), in the study of samples from individuals and museums all over the world, and in wide readings in modern theoretical genetics, evolution, and systematics, McDermott laid the foundations for his major contributions to the taxonomy of the genus Pyractonema (24 pp., 1960), the taxonomy of the Lampyridae in general (72 pp., 1964), and his culminating 149 page revision of the Oliver treatment of the Lampyridae (Pars 9, Junk-Schenkling Coleopterorum Catalogus), a copy of which arrived in Wilmington on the day before his death. Mr. McDermott's collection was willed to the Academy of Natural Sciences of Philadelphia, where he spent many happy hours.

In the long reach of history it will not matter what sort of human being was this man who has so advanced our knowledge of fireflies, but as the representative of his many friends, it is pleasant to be able to pay tributes to his old-school gentlemanship and delightful humor, his catholic interests in the world about him (ranging through gardening and conservation to the aurora, mushrooms, continental drift, songbirds, and hawks), his altruistic activities and concerns in education and science (embracing bibliographic format, long years of activity in the Society of Natural History of Delaware, toiling for Biological and Chemical Abstracts, simplified spelling, lecturing to school children) and his warm home life with his devoted wife of 57 years (who predeceased him by two months) and two daughters.[1]

JOHN BUCK
National Institutes of Health

---

[1] Mrs. Earl D. Krapf and Mrs. William D. Eaton, both of Wilmington. I am particularly indebted to Mrs. Krapf for supplying most of the biographical material used in the above account and for preparing the bibliography.

SCIENTIFIC PUBLICATIONS OF FRANK ALEXANDER McDERMOTT

1. 1903, Electrodeposition of aluminum from acqueous solution, American Electrician. 15: 565.
2. 1909, Note on a new modification of the Kipp gas generator. J. Indust. & Engr. Chem., 1(12): 811-812.
3. 1910, The preparation of platinum black. J. Amer. Chem. Soc., 32(3): 336-338.
4. Physiologic light. Pop. Sci. Monthly, 78(2): 114-121.
5. The light of the firefly. Elec. World, 56: 1189.
6. A note on the light emission of some American Lamypridae. Canad. Entomologist, 42: 357-363.

7. Some observations on the light of the firefly. (Joseph H. Kastle, first author) Amer. J. Physiol., 27: 122-151.
8. 1911, Some considerations concerning the photogenic function in marine organisms, Amer. Naturalist, 45: 118-122.
9. Luciferesceine, the fluorescent material present in certain luminous insects, J. Amer. Chem. Soc., 33: 410-416.
10. Report on an original form of sulfur burner for disinfection. (N. Roberts, first author) U. S. Public Health Reports, 26: 403-410.
11. Some experiments on the formation of ammonia from its elements. J. Amer. Chem. Soc., 33: 515-517.
12. A crucible furnace. J. Amer. Chem. Soc. 33: 507-510.
13. The production of light by living organisms. The chemistry of biophotogenesis. Sci. Amer. Suppl. 71(1842): 250-251.
14. The light of living animals. The structure of photogenic organisms. Sci. Amer. Suppl., 71(1844): 284-285.
15. A comparative study of the structure of the photogenic organs of certain American Lampyridae. (Chas. G. Crane, second author.) American Naturalist, 45: 306-313.
16. Recent advances in our knowledge of the production of light by living organisms. Ann. Rept. Smithsonian Institution, pp. 345-362.
17. The "Eye Spots" of *Alaus oculatus.* Canad. Entomol., 43: 190-192.
18. Some observations on a photogenic microorganism, *Pseudomonas lucifera,* Molisch. Proc. Biol. Soc., Washington, 24: 179-184.
19. The attack of a larval hemipter upon a caterpillar. Proc. Entomol. Soc., Washington, 13: 90-91.
20. Hippuric acid as the cause of the failure of the spectroscopic test for hemoglobin in urine. J. Amer. Chem. Soc., 33: 992-993.
21. A plea for the use of references, and accuracy therein. Science, 33: 852-853.
22. A handy burette holder. (N. Roberts, first author.) J. Amer. Chem. Soc., 33: 1402-1404.
23. Some further observations on the light-emission of American Lampyridae; the photogenic function as a mating adaptation in the Photinini. Canad. Entomol., 43: 399-406.
24. Why do certain living forms produce light? Pop. Sci. Monthly, 79(6): 532-539.
25. Popular superstitions. Outlook, October 21: 27.
26. Nature of the light emitted by fireflies. Nature, 88: 279.
27. The stability of the photogenic material of the Lampyridae and its probable chemical nature. J. Amer. Chem. Soc., 33: 1791-1797.
28. The preparation of stanniciodide, and its solubility in certain organic solvents. J. Amer. Chem. Soc., 33: 1963-1965.
29. The direct synthesis of ammonia from its elements. The catalytic union of hydrogen and nitrogen. Sci. Amer. Suppl. (72(1869): 276-277.
30. 1912, The light-emission of American Lampyridae; notes and corrections on former papers. Canad. Entomol., 44: 73.
31. The Will-o'-the-Wisp. Sci. Amer. Suppl., 74(1911): 112.
32. The ripening of oranges. Florida Grower, 6(12): 115.
33. Observations on the light-emission of American Lampyridae, (4th paper). Canad. Entomol., 44: 309-311.
34. A note on *Photinus castus,* Leconte. Canad. Entomol., 44: 312.
35. Chemiluminescence, the transformation of chemical energy directly into light. Sci. Amer., 105: 225.
36. 1913. The reaction between calcium permanganate and ethyl alcohol. J. Amer. Chem. Soc., 35: 219.
37. Rational church lighting. Lighting Journal, 1: 97.
38. The influence of light producing organisms upon our ideas of illumination. Lighting Journal, 1: 19.
39. Tri- and tetracarpellary walnuts. Torreya, 13: 137-139.
40. Chemiluminescent reactions with physiologic substances. J. Amer. Chem. Soc., 35: 824-826.
41. Some data on the ripening of Florida oranges. J. Amer. Chem. Soc., 35: 834-837.
42. Indirect lighting in a small hospital. Lighting Journal, 1: 243-5.
43. Indirect lighting in a small hospital. Internat. Hosp. Record., 17, (17): 85.
44. On some chemical activities of Citromyces. Mykol. Centralbl., 159-160.

45. 1914. Tri- and tetracarpellary walnuts. Torreya, 14: 127.
46. Uses of the concentrated filament tungsten lamp in the laboratory. J. Amer. Chem. Soc., 6: 454-455.
47. The Watts-per-candle efficiency of the firefly. (Herbert E. Ives, second author) Lighting Journal, 2: 61.
48. The firefly and other luminous organisms. Trans. Illuminating Engr. Soc., 9: 413-424.
49. The firefly and other luminous organisms. Amer. Gas Light, 101: 117-118.
50. 1914, Luminous earthworms in Washington, D.C. (Herbert S. Barber, second author) Proc. Biol. Soc. Wash., 27: 147-148.
51. The ecologic relations of the photogenic function among insects Zts. f. wissen. Insektenbiol., 10: 303-307.
52. A large incubator for laboratory use. J. Indust. & Engr. Chem., 6: 939-940.
53. 1915, Light from electrician's black tape. Sci. Amer., 112: 83.
54. A reaction of the housefly to air currents. J. Animal Behavior, 5: 73-74.
55. Experiments on the nature of the photogenic processes in the Lampyridae. J. Amer. Chem. Soc., 37: 401-404.
56. Alternating current thermoregulators. J. Amer. Chem. Soc., 37: 2381-2382.
57. 1916, Utilization of cull Florida citrus fruits. J. Indust. Engr. Chem., 88: 136-138.
58. Utilization of cull Florida citrus fruits. Bull. 135 Florida Agricultural Exp. Station.
59. The unusual prevalence of ground beetles (Harpalus) during the summer of 1913, at Ashland, Ohio. Entomol. News, 27: 179.
60. The flashing of fireflies. Science, 44: 610.
61. The auroral display of Aug. 26. Science, 44: 679.
62. 1917, Observations on American Lampyridae; the photogenic function as a mating adaptation. (5th Paper) Canad. Entomol., 49: 53-61.
63. An eye-protecting table lamp. Electr. Merchandising, 17: 111.
64. 1920, A vacuum pan for laboratory and experimental use. Sci. Amer. Monthly, 1: 62-63.
65. 1926, Solid hydrogen peroxide. Chem. & Indust., 45: 9.
66. Citations of scientific literature. Science, 63: 596.
67. 1927, Large capacity incubators. Indust. & Engr. Chem., 19: 1274.
68. 1930, Isopropyl lactate. Organic Synthesis, 10: 88-89.
69. 1933, Vacuum desiccators. Chem. & Ind., 52: 82-83.
70. 1948, The common fireflies of Delaware. Privately printed, Wilmington, Del. (One page of corrections and addenda, 1953). 19 pp.
71. 1951, North American fireflies of the genus *Photuris*. Smithsonian Misc. Coll., 117: 1-58. Herbert S. Barber (posthumous). Preface and notes by F. A. McDermott.
72. 1952, an abnormal mating response among lampyrids. Col. Bull., 6: 16.
73. The firefly lamp. Nat. Hist. Notes, Nat. Hist. Soc. Jamaica, No. 52, p. 72.
74. Why study fireflies? Nat. Hist. Notes, Nat. Hist. Soc. Jamaica, No. 53, pp. 93-94.
75. Further data regarding Jamaican Lampyridae, in extension of the work of Dr. John B. Buck. Yearbook, Amer. Philosoph. Soc., pp. 165-167. Reports from Recipients of Grants; Grant No. 1370, 1951.
76. 1953, *Photuris Bethaniensis,* a new lampyrid firefly. Proc. U. S. Nat. Mus., 103: 35-37.
77. Glow-worms in a marine littoral habitat in Jamaica (Coleoptera; Lampyridae). Ent. News, 64: 89-90.
78. 1954, *Photinus pyralis,* male in free flight. Col. Bull., February 1, Vol. 8. Cover Illustration.
79. Adventures with a four-o'clock". Nat. Hist. Notes, Hist. Soc. Jamaica, 64: 55-56.
80. The larva of *Micronaspis floridana* green. Col. Bull., 8: 59-62.
81. 1955, A note on the genus *Diphotus* Barber 1941. (Coleoptera; Lampyridae) Col. Bull., 9: 49-52.
82. 1956, Gigantic glowworms from South America. Col. Bull., 10: 17-19.
83. 1957, A method for the study of aedeagi in Coleoptera. Bull. Amateur Entomologists' Soc., 16: 24.
84. Harvey on light: Review of *A History of Luminescence, etc.,* by E. Newton Harvey. Frontiers, 22: 26.
85. 1958, The fireflies of Delaware, with general notes on fireflies. 2nd ed. of *The Common Fireflies of Delaware*—1948, 36 pp. published by the Society of Natural History of Delaware.
86. Four new lampyrid fireflies. Col. Bull., 12: 21-28.

87. 1959, Two new species of fireflies. Ent. News, 70: 7-12.
88. The lampyrid fireflies of Jamaica. (John B. Buck, second author) Trans. Amer. Ent. Soc., 85: 1-112; 13 plates.
89. 1960, Fireflies of the genus *Pyractonema* (Coleoptera: Lampyridae). Proc. U. S. Nat. Museum, 112: 133-157.
90. Lucidotopsis, genus *Novum*. Col. Bull., 14: 18.
91. A note on the genus *Lucernuta Castelnau* and a new species. Ent. News, 71: 81-85.
92. 1961, A new genus and species of firefly: *Photoctus boliviae* (Coleoptera; Lampyridae). Ent. News, 72: 174-176.
93. "Mimetism" in lampyridae. Col. Bull., 15: 116.
94. A note on the female of *Photinus* Sanctae-Luciae. Col. Bull., 15: 116.
95. 1962, A new photurid firefly, *Photuris missouriensis* sp. nov. (Coleoptera; Lampyridae, Photurinae). Ent. News, 73: 39-43.
96. *Roleta coracina,* gen. nov., sp. nov. Ent. News, 73: 69-73.
97. 1962, Illustrations of the aedeagi of the Lampyridae (Coleoptera). Col. Bull., 16: 21-25.
98. 1963, Frank Morton Jones, 1869-1962, biography and bibliography. Ent. News, 74: 29-36.
99. Photinoides gen. nov. Col. Bull., 17: 84-89.
100. Green Lampyrids (a note). Col. Bull., 17: 128.
101. Two new species of Lampyridae. Entomologische Arbeiten (Frey Museum, Tutzing bei Munchen, Germany), 14: 560-561.
102. 1964, The taxonomy of the Lampyridae. Trans. Amer. Ent. Soc., 90: 1-72.
103. 1965, The Pterotinae. Ent. News, 76: 98-104.
104. The new combination *Lucidota armata* (Gorham) and a Note *on Lucidota eucera*. Col. Bull., 19: 21-23.
105. *Lucidota viridescens,* sp. nov. Ent. News, 76: 153.
106. 1966, *Aspisoma yechae,* sp. nov. Ent. News, 77: 132-135.
107. *Photuris lloydi,* sp. nov. Ent. News, 77: 173-175.
108. Revision and enlargement of Oliver's Pars 9, Lampyridae, of the Junk-Schenkling Coleopterorum Catalogus (1910). Dr. W. Junk, publishers, The Hague, Netherlands, 149 pp.
109. Coleoptera; Lampyridae. Reports of the Swedish expedition to South Africa of 1951. (In Press.)
110. 1967, The North American Fireflies of the genus *Photuris* Dejean. A Modification of Barber's Key. Col. Bull., 21.